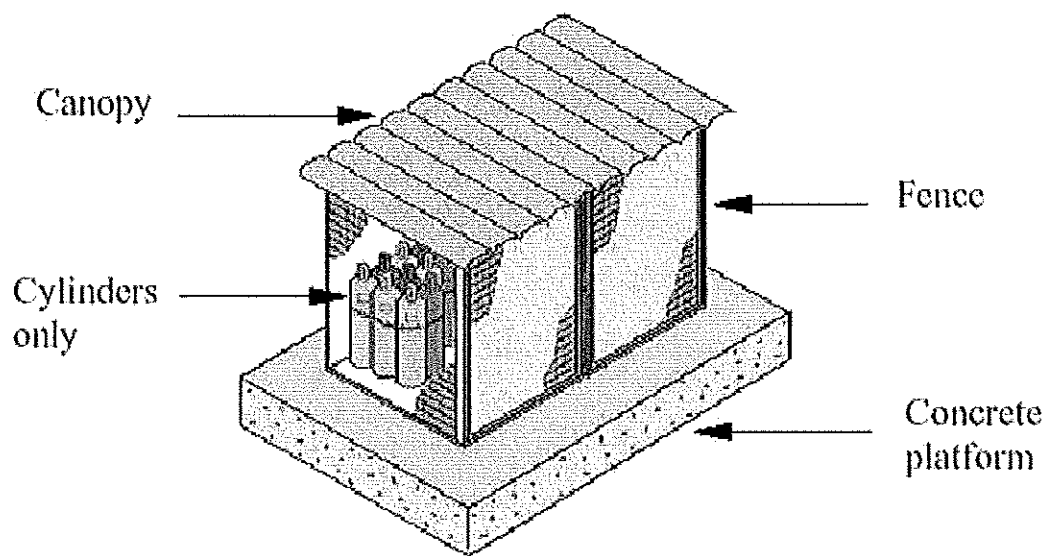


Outdoor Storage of Compressed Gas Cylinders

Guidelines for safe and secure storage



Reasons for Construction
Standards for Compressed Gas Cylinders Outdoor Storage

Standard	Reference	Outdoor Storage Part
Bottoms of compressed gas cylinders must be protected from the ground.	CGA 3.3.9	Concrete platform
Cylinders always maintained at temperatures below 125 degrees.	CGA 3.1.12	Canopy
Gas cylinders segregated by a fire resistant partition	1910.253(b)(4)(iii)	Non-combustable barrier
Noncombustible materials intended to prevent the spread of fire.	Kentucky Fire Code, 1910.106 (b)(2)(ii)(f)	Fence, concrete platform, and canopy
Secured fenced enclosure with gate and lock to discourage tampering and to limit access.	1910.253(b)(2)(ii)	Fence and canopy
Storage for gas cylinders must be away from incompatibles, excessive heat, continuous dampness, salt or other corrosive chemicals, and any areas that may subject them to damage.	CGA 3.3.7 and 1910.101(b)	Fence, concrete platform, and canopy
Storage for gas cylinders must be dry, cool, and well ventilated	1910.253 (b)(2)(ii) and CGA 3.3.5	Fence
Storage for gas cylinders must be fire resistant.	CGA 3.3.5	Concrete platform
Storage for gas cylinders must not be subsurface.	CGA 3.3.5	Concrete platform

General Area Considerations-Outdoor Storage Area

The storage area is to be in a well lighted area, away from combustible materials, above grade, dry, and protected from the weather. Storage areas are not to be exposed to continuous dampness, near salt or other corrosive chemicals or fumes. Corrosion may damage cylinders and cause the valve protection caps to stick.

There should be good access to the area or building for delivery vehicles.

Outdoor Platform-Outdoor Storage Area

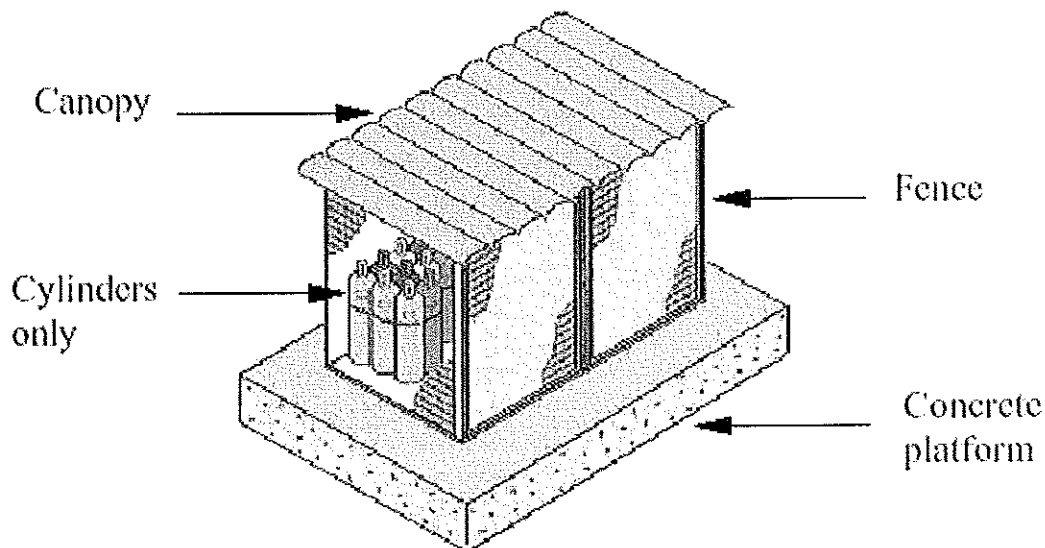
Compressed gas cylinders stored outdoors shall be supported on a raised concrete or other non-combustible platform protected from the weather by a non-combustible canopy in an enclosure surrounded by a firmly anchored fence or non-combustible building. The storage area is for the sole purpose of compressed gas cylinder storage.

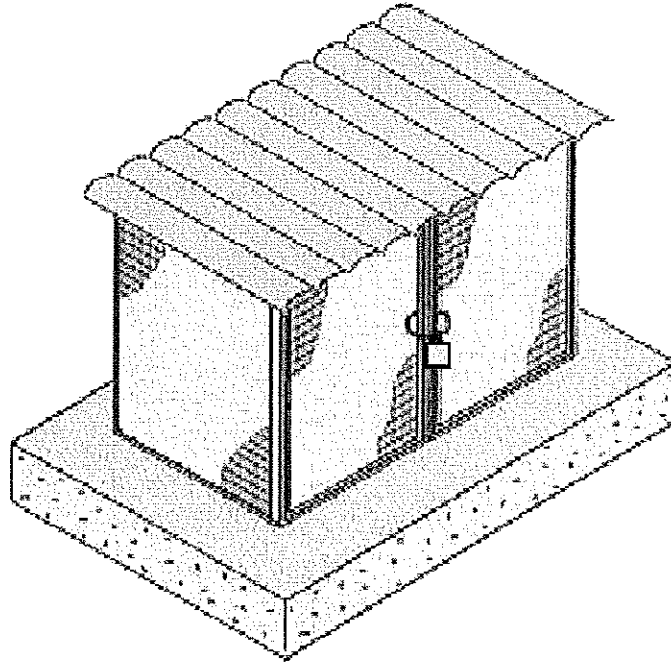
The cylinders must be stored on a raised platform to protect the bottom of the cylinders from corrosion resulting from exposure to dampness that may result from storing them directly on the ground or another low lying surface.

The platform must be secure to support the weight of the cylinders and to reduce the likelihood of them tipping over.

Inside Design-Outdoor Storage Area

The inside of the storage area must have a fire resistant wall having a fire resistance rating of at least half hour. This wall is to be no less than five feet high and is used to separate flammable and non-flammable gasses. If a fire resistant wall is not used, flammable and non-flammable cylinders must be located at least 20 feet apart. The 30 minute fire resistance rating is to prevent the spread of a fire from one cylinder to another.





Canopy-Outdoor Storage Area

The canopy is intended to shelter the cylinders from rain, snow, and direct solar exposure. The platform and canopy must be made of non-combustible materials intended to prevent the spread of fire to or from the storage area.

Fence Enclosure-Outdoor Storage Area

Cylinders must be located in a secure fenced enclosure, or enclosure constructed of non-combustible materials, to discourage tampering and to limit access. The fencing is to be designed to discourage climbing; have a minimum height of 5 1/2 feet; and be equipped with a gate to be kept locked when the enclosure is not staffed. The most secure construction is for the fence to extend from the platform to the bottom of the canopy.

Clearances from Building Openings-Outdoor Storage Area

The outdoor storage area should not be less than 4 1/2 feet from any building opening. This is to prevent gas escaping from the cylinders entering the building through the opening.

Storage of Compressed Gas Cylinders-Outdoor Storage Area

Cylinders are not to be dropped or struck violently.

Cylinders are to be properly secured at all times to prevent tipping. The securing systems shall be anchored to a permanent construction member or fixture. Appropriate securing systems include: chain, plastic coated wire cable, commercial strips, etc.

Valve protection caps are to be kept on the cylinders at all times.

Cylinders must be segregated by hazard class while in storage. Oxidizers (oxygen) must be separated from flammable gases, and empty cylinders must be isolated from filled cylinders.

Labeling of Compressed Gas Cylinders-Outdoor Storage Area

The contents of any compressed gas cylinder shall be identified clearly and completely.

Labels are to be durable and non-removable.

No compressed gas cylinder shall be accepted that does not identify its contents legibly by name.

Color coding is not a reliable means of identification; cylinder colors vary from supplier to supplier, and labels on caps have not value because many caps are interchangeable.

If the labeling on a gas cylinder becomes unclear or defaced so that the contents cannot be identified, the cylinder shall be marked "contents unknown" and the manufacturer contacted regarding appropriate procedures.

